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Nalco Docket No. 7773
Customer No. 49459REMARKS

This Amendment and Response to Office Action is in reply to the Office Action dated October 27, 2006. Claims 1 to 23 are currently pending. The Office Action rejected Claims 1 to 18, 22, and 23 under 35 U.S.C. § 103(a). Applicants have amended Claim 1 and cancelled Claim 19. The Specification has been amended to correct minor grammatical errors. These amendments do not add new matter.

Applicants submit herewith a Request for Continued Examination.

The Office Action rejected Claims 1 to 4, 6 to 10, 13 to 18, 22, and 23 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,674,362 to Underwood et al. ("Underwood"). Applicants respectfully disagree with and traverse this rejection for at least the following reasons and have amended Claim 1 to clarify its elements.

Underwood discloses a method for imparting strength to paper by adding a mixed resin solution during the papermaking process. (col. 2, lines 10 to 16). The mixed resin solution includes a glyoxylated acrylamide-diallyldimethyl ammonium chloride copolymer. (col. 3, lines 38 to 42). The copolymer has a molecular weight of about 500 g/mole to 100,000 g/mole. (col. 4, lines 1 to 5).

Amended Claim 1 (and Claims 2 to 4, 6 to 10, 13 to 18, 22, and 23 that depend therefrom) relates to a method of enhancing the press section dewatering of a paper sheet on a paper machine. The method includes adding to the paper sheet about 0.05 lb/ton to about 15 lb/ton, based on dry fiber, of one or more aldehyde functionalized polymers having a weight average molecular weight of at least about 300,000 g/mole. These polymers include amino or amido groups wherein at least about 15 mole percent of the amino or amido groups are monoreacted and functionalized by reacting with one or more aldehydes.

Underwood does not teach or suggest enhancing the press section dewatering of a paper sheet on a paper machine in any way, including by adding to the paper sheet the aldehyde functionalized polymers of Amended Claim 1. Rather, Underwood discloses a method of imparting dry and/or wet strength to paper by adding a mixed resin solution to a recycle pulp slurry. Underwood discloses only the use of a combination resin for increasing paper strength and does not teach or suggest

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adding to a paper sheet one or more aldehyd functionalized polymers having a molecular weight of at least about 300,000 g/mole, wherein at least about 15 mole percent of the amino or amido groups of the polymer are monoreacted and functionalized by reacting with one or more aldehydes. Thus, Underwood in no way teaches or suggests the monoreacted aldehyde functionalized polymers of Amended Claim 1.

Therefore, Applicants respectfully submit that Claim 1 (and Claims 2 to 4, 6 to 10, 13 to 18, 22, and 23 that depend therefrom) are patentably distinct over Underwood and are in condition for allowance for at least the reasons discussed above. Accordingly, Applicants respectfully request that this rejection be withdrawn.

The Office Action rejected Claims 1 to 4, 6 to 10, 13 to 18, 22, and 23 under 35 U.S.C. § 103(a) as being unpatentable over Underwood in view of U.S. Patent No. 3,556,932 to Coscia et al. ("Coscia"). Applicants respectfully disagree with and traverse this rejection for at least the below reasons and have amended Claim 1 to clarify its elements.

Underwood's disclosure is set forth above. Coscia discloses ionic water-soluble polyvinylamides having glyoxal content. The Coscia polymers are thermosetting and are strengthening agents for paper. (col. 1, lines 50 to 55 and col. 2, lines 50 to 53). Coscia states, "[t]he ratio of the glyoxal substituent on the backbone to the amide substituent is about 0.12:1." (col. 8, lines 65 to 67).

Amended Claim 1 (and Claims 2 to 4, 6 to 10, 13 to 18, 22, and 23 that depend therefrom) relates to a method of enhancing the press section dewatering of a paper sheet on a paper machine. Among other elements, the method includes adding to the paper sheet about 0.05 lb/ton to about 15 lb/ton, based on dry fiber, of one or more aldehyde functionalized polymers having a weight average molecular weight of at least about 300,000 g/mole. These polymers include amino or amido groups wherein at least about 15 mole percent of the amino or amido groups are monoreacted and functionalized by reacting with one or more aldehydes.

Underwood in view of Coscia does not teach or suggest a method of enhancing the press section dewatering of a paper sheet on a paper machine in any way, including by adding to the paper sheet the aldehyde functionalized polymers of Amended Claim 1. These references relate to methods

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of increasing the strength of a paper product by adding certain polymers to a paper pulp. The references do not teach or suggest adding to a paper sheet one or more aldehyde functionalized polymers wherein at least about 15 mole percent of the amino or amido groups are monoreacted and functionalized by reacting with one or more aldehydes. Neither Underwood nor Coscia teach or suggest distinguishing between monoreacted and direacted forms of any polymers. Thus, Underwood in view of Coscia does not teach or suggest using the monoreacted aldehyde functionalized polymers of Amended Claim 1 to enhance the press section dewatering of a paper sheet.

For at least the reasons explained above, Applicants respectfully submit that Amended Claim 1 (and Claims 2 to 4, 6 to 10, 13 to 18, 22, and 23 that depend therefrom) are patentably distinct over Underwood in view of Coscia and are in condition for allowance. Accordingly, Applicants respectfully request that this rejection be withdrawn.

The Office Action rejected Claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Underwood in view of U.S. Patent No. 6,315,866 B1 to Sanchez ("Sanchez"). Applicants respectfully disagree with and traverse this rejection.

Applicants respectfully submit that Claim 5 is in condition for allowance because it depends from allowable Amended Claim 1 and because of additional elements recited in Claim 5. Therefore, Applicants respectfully request that this rejection be withdrawn.

The Office Action rejected Claims 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Underwood in view of U.S. Patent No. 5,654,198 to Carrier et al. ("Carrier"). Applicants respectfully disagree with and traverse this rejection.

Applicants respectfully submit that Claims 11 and 12 are in condition for allowance because these claims depend from allowable Amended Claim 1 and because of additional elements recited in Claims 11 and 12. Therefore, Applicants respectfully request that this rejection be withdrawn.

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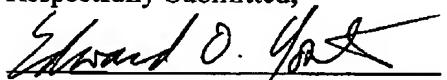
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CONCLUSION

In view of the foregoing amendment and remarks, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 103(a). Applicants respectfully assert that all pending claims in this Application are in condition for allowance and earnestly solicit early notice to this effect.

Respectfully Submitted,



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